

Serial No.: 09/619,442

PATENT APPLICATION

Docket No.: N.C. 79,834

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

1-14. (cancelled)

15. (previously presented) A method for creating a deposit of a material of interest on a receiving substrate, the method comprising the steps of
- providing a first laser and a second laser, wherein the first laser is a pulsed laser,
 - providing a receiving substrate,
 - providing a target substrate comprising a laser-transparent support having a back surface and a front surface, wherein the front surface has a coating that comprises a source material, wherein the source material is a material that can be transformed into the material of interest,
 - positioning the first laser in relation to the target substrate and exposing the target substrate to pulsed laser energy so that the pulsed laser energy is directed through the back surface of the target substrate and through the laser-transparent support to strike the coating at a defined target location with sufficient energy to cause the source material to be removed from the surface of the support at the defined location,
 - positioning the receiving substrate in a spaced relation to the target substrate so that the source material is deposited at defined receiving location on the receiving substrate, and
 - positioning the second laser in relation to the receiving substrate so that laser energy strikes the deposited source material to transform the source material into the material of interest;
- wherein the first laser has an energy and wavelength chosen to vaporize one or more monolayers of the source material adjacent to the target substrate without vaporizing the rest of the source material.

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16. (original) The method of Claim 15 including the further step of pretreating the receiving substrate by positioning the first laser or the second laser so that it strikes the receiving substrate before the source material is deposited thereon.
17. (original) The method of Claim 15 wherein the receiving substrate is maintained at a constant temperature of between -50°C and 300°C.
18. (original) The method of Claim 15 wherein the source material is a homogeneous mixture of an organometallic compound and a metal powder.
19. (original) The method of Claim 15 wherein the source material is a organometallic/metal powder combination selected from the group consisting of
 - silver I 2,4-pentanedionate/silver;
 - silver neodecanoate/silver;
 - platinum 2,4-pentanedionate/platinum;
 - indium 2,4-pentanedionate/indium;
 - copper II 2,4-pentanedionate/copper; and
 - indium acetylacetonate/indium.
20. (withdrawn) The method of Claim 15 wherein the source material is a homogeneous mixture of a hydrated metal alkoxide and a metal powder.
21. (withdrawn) The method of Claim 15 wherein the source material is a hydrated metal alkoxide.
22. (withdrawn) The method of Claim 15 wherein the source material is a mixture of aluminum isopropoxide and aluminum oxide powder.
23. (withdrawn) The method of Claim 15 wherein the source material is an inorganic alkoxide/inorganic oxide mixture selected from the group consisting of barium titanium ethylhexanoisopropoxide/barium titanate powder and strontium titanium isopropoxide/strontium titanate powder.

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24. (withdrawn) The method of Claim 15 wherein the source material is a mixture of one or more metal organic compounds.
25. (withdrawn) The method of Claim 15 wherein the source material is a mixture of one or more hydrated metal alkoxides.
26. (previously presented) A method for creating a deposit of a material of interest on a receiving substrate, the method comprising the steps of
providing a target substrate comprising a laser-transparent support having a back surface and a front surface, wherein the front surface has a coating that comprises a source material, wherein the source material is a material that can be transformed into the material of interest,
providing a receiving substrate,
directing a pulsed laser beam through the back surface of the target substrate and through the laser-transparent support so that it strikes the coating at a defined target location with sufficient energy to cause the source material to be removed from the surface of the support at the defined location, and so that the source material is deposited at defined receiving location on the receiving substrate, and
directing a laser beam to strike the deposited source material to transform the source material into the material of interest;
wherein the pulsed laser beam has an energy and wavelength chosen to vaporize one or more monolayers of the source material adjacent to the target substrate without vaporizing the rest of the source material.
- 27-28. (canceled)
29. (previously presented) The method of Claim 15, wherein the second laser decomposes the source material to form the material of interest.
30. (cancelled)
31. (previously presented) The method of Claim 26, wherein in the step of directing a laser beam, the laser beam decomposes the source material to form the material of interest.

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32. (cancelled)
33. (previously presented) The method of Claim 15, wherein a gap exists between the target substrate and the receiving substrate.
34. (previously presented) The method of Claim 26, wherein a gap exists between the target substrate and the receiving substrate.
35. (new) The method of Claim 15, wherein the source material is a homogenous material.
36. (new) The method of Claim 26, wherein the source material is a homogenous material.
37. (new) The method of Claim 15, wherein substantially all of the deposited source material is transformed into the material of interest.
38. (new) The method of Claim 26, wherein substantially all of the deposited source material is transformed into the material of interest.
39. (new) The method of Claim 15, wherein the second laser is the first laser, wherein one or more parameters of the first laser selected from the group consisting of wavelength, pulse width, relative timing, polarization, and power have been adjusted.